AMSAT SATELLITE REPORT

Number 33
May 24, 1982

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Flash Flash Flash Flash
New Russian Satellite Due Now!

In a late breaking story, the Amateur Radio community awaited the arrival of yet another Russian Amateur Radio Satellite. A message received at AMSAT Headquarters on Friday, 14 May indicated that a launch was imminent.

"To: W3IWI AMSAT President.

It is expected that USSR will launch hf 21/29 MHz Amateur satellite to celebrate the 19th Congress of Comsomol on Monday the 17th of May. Telemetry on 29.580 MHz same pattern as RS. (signed) Andre Gschwindt, HA5WH, Chairman of the Satellite Coordination Group, IARU Region 1."

Stop Press: On Monday, 17 May, the Amateur Radio world greeted yet another Russian Amateur Radio Satellite. The latest, signing RKØ2, obtained it's birth by being jettisoned from the Salyut 7 space station by the Cosmonauts aboard. Salyut 7 was launched 19 April. The crew (T-5) comprises Lt. Col. Anatoliy Berezovoy (the mission commander on his initial space flight) and Cosmonaut Valentin Lebedev on his second space flight.

The crew was launched to space 13 May aboard a Soyuz and quickly maneuvered to dock with the unoccupied Salyut. The 28 kg. (62 pound) communications satellite was, according to Radio Moscow, built by students. It was apparently ejected through a hatch. If so, this would be the first "get-away special" type launch of an Amateur space package.

At press time signals were being monitored at 28.878 MHz. There was no indication of 21 MHz activity nor was it certain a transponder is involved. Since the callsign of this device is RKØ2, one wonders about RKØ1.

It is expected that a French Cosomonaut will shortly be launched to join the Russians already on Salyut. Usually reliable sources indicated that the French Cosmonaut strongly eschews Russian space food which typically comes in "toothpaste tubes." Instead, he has commissioned some of France's finest chefs to prepare and freeze dry their *haute cuisine. Sacre bleu!*

Those who wish to prepare locators for RKØ2 will find the following preliminary data helpful:

Ref. Orbit for 19 May: 00:54:02, 248.7° W, 91.345922 min./orbit, 23.226506° W/orbit
Rough orbital parameters: apogee 345.85 km. perigee 342.55 km.

Elevation *vs* Slant Range (approximately)

Degrees	*Kilometers*
0	2150
10	1300
20	870
30	650
40	550
50	450

Ground track

Time (min.) after EQX	*Latitude*	*Longitude*
0	0	0
2	6.6	355.6
4	12.7	350.8
6	18.7	346.0
8	24.6	340.9
10	30.2	335.2
12	35.5	328.7
14	40.3	321.3
16	44.6	312.8
18	48.0	303.0
20	50.4	292.1
22	51.5	280.2
24	51.3	268.0
26	49.8	256.4
28	47.1	245.7
30	43.4	236.3
32	39.0	228.1
34	34.0	221.0
36	28.7	214.8
38	23.0	209.3
40	17.1	204.2
42	11.0	199.5
44	4.9	195.0
46	−1.3	190.6

Keplerian Elements

Object No.	13138
Element Set #	43
Ref. Epoch	82 135.23118989
Mean Anomaly	55.8167
Inclination	51.5941
Eccentricity	0.0002452
Mean Motion	15.75128484
1st Der. of Mean Motion	0.00030028
Arg. of Perigee	304.2741
RAAN	20.6840
Rev. # of Ref. Epoch	403

Bud Schultz, W6CG, Down For Maintenance

AMSAT's California Area Coordinator and Satellite Controller par excellence W6CG was recovering from surgery the week of 9 May. Bud had gone in for scheduled surgery (relatively straightforward eye surgery) and, though the eye surgery went well, unexpected side effects made his recovery somewhat more problemmatic. Towards the end of the week he was beginning to feel a bit more chipper we're glad to report. You can help speed Bud's recovery by sending him a short get well wish. His address is: Bud Schultz, W6CG, 3050 West Ball Road, #154, Anaheim, CA 92084. All of those who have worked Bud or have listened to his fine Southwest Pacific AMSAT Information Net on Saturdays will want to express their thanks to Bud for those services by relaying recovery wishes to this venerable satellitier.

Arkansas DXpedition Set For Month's End

It's been quite a while since there was a regular station on from the state of Arkansas. Now comes word that KO5I will head an expedition to Rich Mountain Arkansas the weekend of 29/30 May (Memorial Day weekend). Doug indicates that the station will be active on all available Mode J and A passes. Those needing Arkansas for their WAS will want to watch for this one.

Annual HAM-COM Slated 4-6 June

Led by a 3-man AMSAT veteran team, the famous Dallas Ham-Com AMSAT contingent will field their presentation on Sunday morning, 6 June. The three day event begins on 4 June. Northern Texas Area Coordinator and AMSAT Net Control station Doug Loughmiller, KO5I will captain the team comprising also Assistant Coordinator Al Brinkerhoff, WB5PMR, and Oklahoma Coordinator Larry Papke, WB5MPU. The three virtuosos plan a first rate forum covering two hours featuring the new vidoe tape "What is AMSAT" by W4MID. Next to the Dayton Hamvention, Ham-Com figures as one of the largest amateur radio events in the world. If you are anywhere in the West the weekend of 4-6 June, AMSAT recommends you drop in to Ham-Com 82 in Dallas!

S.W. Division Convention

The ARRL Southwestern Division Convention will be held at the Town and Country Convention Center, San Diego, June 4, 5 and 6. The "Ham-Comp 82" features the regional ARRL affair and the San Diego fair combined. The San Diego County Amateur Radio Council (SANDARC, an AMSAT supporting organization) is the sponsor.

Programs of interest to AMSAT folks include "Phase III Satellite Progress" by Chairman W6SP, at 0900 hours on Saturday. At 1300 hours, W6PAJ and KL7GRF will speak about "The AMSAT Phase III Command Network." The convention management expects 4,000 attendees.

Kepler Test Sloughed On ASR Readership

Did you catch it? Ha ha. *ASR* Editors put one over on you if you didn't catch the "test" erroneous mean motion value in *ASR* #31. The mean motion value for RS-4 should have read 12.06647694. Oh well. Haste makes waste. K1HTV was the first to catch us in the act. Sri.

Calls For Help In Pubs

Sound like a plea for a drinking buddy in an Irish "Pub"? Not quite! The publication of *ASR* and *ORBIT* Magazine is a time-consuming task but worthy of the effort once the product is complete. Did you realize how few persons put all this material together for you to consume? Barely a half-dozen regulars! And these chaps must try to fit this into their so-called "spare" time. The point is that we need more active involvement in the publications end of this hobby if we are to continue to enjoy the excellent quality and low cost of our magazine and newsletter. Our volunteer staff is sorely overloaded. Plainly, individuals must step forward to volunteer or we will have to contract for services...at increased cost to the members. The only other alternative is to cut back...even eliminate the magazine or revert to the quarterly newsletter. If you can help and would like to be a regular contributor to either (or both) *ORBIT* and *ASR*, please contact WA2LQQ at P.O. Box 177, Warwick, NY 10990. Trying to keep one's act well-balanced is rather like juggling. When one has too much to juggle things occasionally slip. Witness the photo below which affords a fair approximation of your Editor's predicament! 'Nuff said.

Nomination Closing, Meeting Dates Announced

AMSAT President Dr. Tom Clark, W3IWI, has announced the following regarding nominations for the Board of Directors. The nomination period will close on 31 July 82. After that date no further nominations will be accepted as valid. Tom also explained that the nominating procedure is somewhat easier than had been previously announced. First, although five nominators are in fact required for a nomination to be valid, these nominators may act alone and not necessarily in concert. That is, if you care to nominate someone, you needn't seek out another four individuals so disposed. Just mail your nominating petition to AMSAT HQ prior to the closeout date. You must give the name and address (including zip code in the U.S.) of your nominee. But you need not know his member number. He must be, however, a Life Member or an annual member in good standing. You must give *your* member number as part of the nominating petition. Finally, the nominee will be expected to provide minimal biographical/experience information if he in fact wishes to stand for election. (We use the male gender here with the tacit assumption that "she" is interchangeable in all cases and that the nomination of femal Directors *is* welcome).

W3IWI also announced that the Annual Meeting will be held this year on Sunday, 10 October at the Employees Recreation Center, Goddard Space Flight Center, Greenbelt, Maryland. Further details to follow as they become available.

Phase IIIB Launch Next January

Usually reliable sources have told *ASR* that the launch of AMSAT's Phase IIIB spacecraft along with the European Communications Satellite (ECS-1) will be coming January aboard Ariane L7. At press time the media was briefed as regards the balance of the launches now scheduled to commence this September with L5 (Marecs B/Sirio 2) and November with L6 (Exosat).

The launch schedule of Ariane has been in disarray since a major malfunction was discovered aboard MARECS A launched last December aboard Ariane LO-4, the last of the test launches. A so-called plasma sheath developed on the spacecraft. According to various sources the sheath either was hindering operations or, according to another, had caused severe damage by way of a heavy electrical discharge which had destroyed vital circuitry. British Aerospace, which built much of MARECS A, also built the "B" version and had a major hand in ECS. Thus, when MARECS A developed an apparent generic problem (applying to others in the family) the entire Ariane schedule crumbled. Now comes the first indication of the reconstituted plan.

AMSAT comes out of the shuffle relatively unscathed. It is still mated with ECS 1 which means there will be no expensive, time-consuming rework of the payload interface. And, should any last minute work be required, there is benefit in having time to make adjustments. Certainly it would have been nice to have had a launch this summer or autumn.

Name-The-Mode-Contest

ASR Editor WA2LQQ is sponsoring a contest to see who can find the most logical name for the two new modes on the Phase IIIB satellite. As you recall there is the mode we call "B" which has an uplink at 70 cm and a 2 meter downlink. Have you ever wondered why it is called Mode B and not, say, Mode Green? Simple. Way back in ancient history when AMSAT-OSCAR 7 was in design there were two control flip-flops which together determined the mode of the spacecraft. The "A" output gated the 2 meter receiver "on" and the 10 meter transmitter "on." Similarly, the "B" output switched the 70 cm receiver and 2 meter transmitter "on." There was also a "C" and a "D" output on AO-7. "C" was a low-power version of "B" and "D" was the recharge mode. So that's where the "B" in Mode "B" came from.

Mode "J" derived from the JAMSAT contribution to AO-8. They deservedly named the product of their labors.

But what to call the new, Phase IIIB mode that has an uplink at 1269 MHz and a downlink at 436 MHz? We have referred to the hardware that performs this function as the "L-Transponder." But does that make it Mode L? Not necessarily! Sometime back some of our colleagues selected Mode M as the designation for the Syncart "M"icrowave transponder. But that is not what is going to be flown on Phase IIIB.

Is there a logical, unique apellation for the new mode that will tell us *more* than just a name. For example, if the up and downlinks were more widely separated than they are, we might be able to use microwave band designations in suitable combinations that would not only uniquely identify the transponder, but could also simultaneously tell us what the up/down combinations were. Suppose the uplink were at 2.3 GHz and the downlink at 10 GHz. Then the transponder could be called "The SX" transponder. Better yet, one could add the Latin connective "e" to denote both parts of the transponder, ie, receiver on "S" and transmitter on "X". Thus, one could tell one's spouse (in all candor) that one was going to the basement to work on the "SeX" machine and "that I shouldn't be bothered for a while, thank you very much!"

Using designations of this sort should have some merit even if taken seriously! The dilemma arises, however, immediately since both the up and downlinks of the L-transponder lie within the L band. "Aha!", you say. "There are subdivisions." True enough. So an uplink at 1269 MHz is at Lk and the downlink is at Lp. So what do we call it? LkLp? LpLk? Perhaps Lpk? Well, you see the problem. Mode X is so simple to say, it's a shame it doesn't tell us more about the transponder.

To that clever soul who finds the "best" designation system goes the possibility of having his idea forever associated with Phase IIIB, Mode (whatever) and a first-rate prize of undetermined origin and pedigree (to be specified at a later date). Mail your ideas, good or otherwise, to: WA2LQQ, P.O. Box 177, Warwick, NY 10990. No entries will be returned and I promise only to read every letter. Replies will be made in exceptional cases, such as for the most *absurd* suggestion. Good luck! Deadline for entries is whenever I can stand the pain no longer!

AMSAT To Show At Washington AFCEA Convention

AMSAT's participation in the Armed Forces Communications-Electronics Association's (AFCEA) 36th Annual Convention and Exposition seems set now through the efforts of Chairman W6SP and Alternate Director W3XO. AFCEA is an organization of communications professionals from government, military and industry.

The Convention begins in Washington, D.C. June 15th and runs through the 17th. Several thousand attendees annually make this event one of the most important in the communications-electronics calendar. With this same industry figuring to play a major role in future launch opportunities for AMSAT hardware, the AFCEA Convention is similarly prominent on the AMSAT calendar.

Several hundred AFCEA members are licensed Radio Amateurs and dozens of them are AMSAT members as well. (W6SP has held local and regional posts with AFCEA's field organization). Thus it seems natural that AFCEA finds it appropriate to gather these Radio Amateurs in their own luncheon (Wednesday, 16 June, 11:30 am) and their own meeting (Wednesday, 16 June, 2:00 pm) both held in the Delaware Suite of the Sheraton Washington Hotel, Washington, D.C., the place of the general convention and exposition.

As usual, hundreds of exhibitors will be on hand displaying their wares: hardware, software or services. Many of the names on the booths will be familiar ones to amateurs. Names such as Rockwell/Collins, Texel/HyGain and others who are prominent in amateur as well as industrial and military communications will be represented. AMSAT will have its own booth in an area shared with other special service organizations such as MARS. The booth will be staffed by AMSAT volunteers including many of the AMSAT management team, ie, W6SP, W3XO, W3GEY, W3IWI, WA2LQQ, K1HTV, WA5FXE/3, et al. The display concept used for Dayton with the W4MID video tape as the center piece will be adapted for use at AFCEA.

The concept of AMSAT participation at the AFCEA Convention received an enthusiastic endorsement from the Board of Directors at its most recent meeting based on the premise that the exposure of AMSAT's "mission and message" to this specific community was/is *absolutely* essential in order for AMSAT to continue to successfully compete for the rare "gratis" launch opportunities (free rides) that remain. AMSAT's opportunity to field its Phase IIIC bird in the future may in the final analysis depend on its collective ability to make its case heard in forums such as the impending Convention. While it seems a truism that important rapprochement is seldom realized in open forum, the door-opening opportunities afforded are ignored only at great cost.

UoSAT Back To Square One

A weekend trip by Dr. Martin Sweeting, G3YJO, to the QTH of K1WHS has painted a grim picture for the future of UoSAT. Program Manager G3YJO made the trip to Lebanon, Maine in hopes of being able to extricate his spacecraft from a mode where both beacons are simultaneously on. This condition makes commanding the spacecraft exceedingly difficult. Dr. Sweeting had hoped that by using the huge 2 meter EME array at K1WHS to overcome the desense problem, the glitch aboard UoSAT could be cleared. No luck. Despite hours of trying and the assurances of the modeling done in England, UO-9 did not respond as expected. (See also *ASR* #31).

The next move was indeterminate as G3YJO travelled to Washington for consultations on Monday, 10 May. Launched last October, UO-9 has been excruciatingly slow in fulfilling its potential. The present glitch, though serious enough, has not caused any among AMSAT UK's crew to write it off. Indeed, if anything, the team is more determined than ever to salvage the mission.

This may not be easy with perhaps 20 or 25% of its predicted lifetime now expended. (UoSAT is predicted to deorbit in Spring, 1984.) Tests performed virtually up to the minute of the present glitch indicated all experiments except the 40 keV geiger tubes were operational. A preliminary CCD image of Great Britain was received showing that the camera functioned. The stabilization regime had commenced. Boom deployment was begun.

Meanwhile, a loyal core of potential users awaits Amateur Radio's first scientific satellite in hopes that all this hoopla will yield at least a few months of worthwhile data. Stay tuned.

Dayton Helpers Addendum

Also on hand at the Dayton Hamvention (but not mentioned in the last *ASR*) were NØUU, N4AR, W4AUZ and W3BWU. Next year we'll have a register set out so that we won't forget anyone who stopped to say hello!

AMSAT Satellite Report *is published and mailed First Class bi-weekly by The Radio Amateur Satellite Corporation, P.O. Box 27, Washington, DC 20044 for the purpose of enhancing communications about the Amateur Radio Satellite Program. Subscription rate is $18.00 ($26.00 overseas) yearly by check or money order to "Satellite Report," 221 Long Swamp Road, Wolcott, CT 06716. Information published herein may be quoted without permission provided credit is given.*